

# Dwyer Magnehelic Pressure Gauges



Select the Dwyer Magnehelic gauge for high accuracy--guaranteed within 2% of full scale--and for the wide choice of 81 ranges available to suit your needs precisely. Using Dwyer's simple, frictionless Magnehelic movement, it quickly indicates low air or non-corrosive gas pressures--either positive, negative (vacuum) or differential. The design resists shock, vibration and over-pressures. No manometer fluid to evaporate, freeze or cause toxic or levelling problems. It's inexpensive, too.

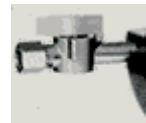
Widely used to measure fan and blower pressures, filter resistance, air velocity, furnace draft, pressure drop across orifice plates, liquid levels with bubbler systems and pressures in fluid amplifier or fluidic systems. It also checks gas-air ratio controls and automatic valves, and monitors blood and respiratory pressures in medical care equipment.

## Mounting

A single case size is used for most ranges of Magnehelic gauges. They can be flush or surface mounted with standard hardware supplied. With the optional A-610 Pipe Mounting Kit they may be conveniently installed on horizontal or vertical 1 1/4" - 2" pipe. Although calibrated for vertical position, many ranges above 1 inch may be used at any angle by simply re-zeroing. However, for maximum accuracy, they must be calibrated in the same position in which they are used. These characteristics make Magnehelic gauges ideal for both stationary and portable applications. A 4 9/16" hole is required for flush panel mounting. Complete mounting and connection fittings plus instructions are furnished with each instrument.

## Vent Valves

In applications where pressure is continuous and the Magnehelic gauge is connected by metal or plastic tubing which cannot be easily removed, we suggest using Dwyer A-310A vent valves to connect gauge. Pressure can then be removed to check or re-zero the gauge



## High and Medium Pressure Models

Installation is similar to standard gauges except that a 4 13/16" hole is needed for flush mounting. The medium pressure construction is rated for internal pressures up to 35 psig and the high pressure up to 80 psig. Available in all ranges. Because of larger case, will not fit in portable case. Weight 1 lb., 10 oz. (Installation of the A-321 safety relief valve on standard Magnehelic gauges often provides adequate protection against infrequent overpressure; see Bulletin S-101).

## Physical Data

|                                  |   |
|----------------------------------|---|
| <b>Ambient temperature range</b> | 20° to 140° F.*   |
| <b>Rated total pressure</b>      | -20" Hg. to 15 psig. +  |
| <b>Overpressure</b>              | Relief plug opens at approximately 25 psig  |
| <b>Connections</b>               | 1/8" NPT female high and low pressure taps duplicated - one pair side and one pair back.  |
| <b>Housing</b>                   | Die cast aluminium. Case and aluminium parts Iridite-dipped to withstand 168 hour salt spray test. Exterior finish is baked dark grey hammerloid. |

|                             |   |
|-----------------------------|---|
| <b>Accuracy</b>             | Plus or minus 2% of full scale (3% on - 0 and 4% on - 00 ranges), throughout range at 70°F.   |
| <b>Standard accessories</b> | Two 1/8" NPT plugs for duplicate pressure taps, two 1/8" pipe thread to rubber tubing adapter and three flush mounting adapters with screws. (Mounting and snap ring retainer substituted for 3 adapters in MP & HP gauge accessories.) |
| <b>Weight</b>               | 1 lb. 2 OZ.   |

\* Low temperature models available as special option.

+ For applications with high cycle rate within gauge total pressure rating next higher rating is recommended. See Medium and High pressure options lower left.

## Options

### Transparent overlays

Furnished in red and green to highlight and emphasise critical pressures

### Adjustable signal flag

Integral with plastic gauge cover; has external reset screw. Available for most ranges except those with medium or high pressure construction. Can be ordered with gauge or separately

### LED Setpoint indicator

Bright red LED on right of scale shows when setpoint is reached. Field adjustable from gauge face, unit operates on 12 - 24 VDC Requires MP or HP style cover and bezel

### Portable units

Combine carrying case with any Magnehelic gauge of standard range (not high pressure) includes 9 ft. of 3/16" I.D. rubber tubing, stand- hang bracket, and terminal tube with holder

### Air filter gauge accessory pack

Adapts any standard Magnehelic for use as an air filter gauge. Includes aluminium surface mounting bracket with screws, two 5 ft lengths of 1/4" aluminium tubing, two static pressure tips and two moulded plastic vent valves, integral compression fittings on both tips and valves

## Construction

1. **Bezel** provides flange for flush mounting in panel.

2. **Clear plastic face** is highly resistant to breakage. Provides undistorted viewing of pointer and scale.

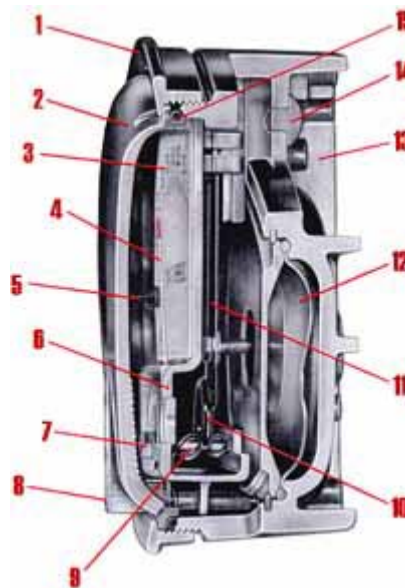
3. **Precision litho-printed scale** is accurate and easy to read

4. **Red tipped pointer** of heat treated aluminium tubing is easy to see. It is rigidly mounted on helix shaft

5. **Pointer stops** of moulded rubber prevent pointer over-travel without damage

6. **"Wishbone" assembly** provides mounting for helix, helix bearings and pointer shaft

7. **Sapphire bearings** are shock-resistant mounted; provide virtually friction-free motion for helix. Motion damped with high viscosity



15. **"O" ring seal** for cover assures pressure integrity of case

14. **Blowout plug** of silicone rubber protects against overpressure on 15 PSIG rated models. Opens at approximately 25 PSIG

13. **Die cast aluminium case** is precision made. Iridite-dipped to withstand 168 hour salt spray test. Exterior finished in baked dark grey hammerloid. One case size used for all standard pressure ranges, and for both surface and flush mounting

12. **Silicone rubber diaphragm** with integrally moulded "O" ring is supported by front and rear plates. It is locked and sealed in position with a sealing plate and retaining ring. Diaphragm motion is restricted to prevent damage due to overpressures

11. **Calibrated range spring** is a flat

silicone fluid

8. **Zero adjustment screw** is conveniently located in plastic cover, accessible without removing cover. "O" ring seal provides pressure tightness

9. **Helix** is precision milled from an alloy of high magnetic permeability, deburred and annealed in a hydrogen atmosphere for best magnetic qualities. Mounted in jewelled bearings, it turns freely to align with magnetic field of magnet to transmit pressure indication

leaf of Swedish spring steel in temperature compensated design. Small amplitude of motion assures consistency and long life. It reacts to pressure on diaphragm. Live length adjustable for calibration

10. **Alnico magnet** mounted at one end of range spring rotates helix without mechanical linkages

## Series 2000 Magnehelic Gauges, models, ranges

The models listed below will fulfil most requirements. Custom models can be provided for OEM customers. For special units with scales reading in ounces per square inch, inches of mercury, other metric units, etc., contact the factory.

| Model Number   | Range Pascal's    | Minor Div. |
|--|-------------------|------------|
| 2000-60 Pa   | 0-60              | 2.0        |
| 2000-125 Pa  | 0-125             | 5.0        |
| 2000-250Pa   | 0-250             | 5.0        |
| 2000-500Pa   | 0-500             | 10.0       |
| 2000-750 Pa  | 0-750             | 25.0       |
| Zero Centre Range                                      |                   |            |
| 2300-250 Pa  | 125-0-125         | 5.0        |
| 2300-500 Pa  | 250-0-250         | 10.0       |
| Model Number   | Range Kilopascals | Minor Div. |
| 2000-1 kPa   | 0-1               | .02        |
| 2000-1.5 kPa   | 0-1.5             | .05        |
| 2000-2 kPa   | 0-2               | .05        |
| 2000-3 kPa   | 0-3               | .10        |
| 2000-4 kPa   | 0 4               | .10        |
| 2000-5 kPa   | 0 5               | .10        |
| 2000-8 kPa   | 0-8               | .20        |
| 2000-10 kPa  | 0-10              | .20        |
| 2000-15 kPa  | 0-15              | .50        |
| 2000-20 kPa  | 0-20              | .50        |
| 2000-25 kPa  | 0-25              | .50        |
| 2000-30 kPa  | 0 30              | 1.0        |
| Zero Centre Range                                      |                   |            |
| 2300-1 kPa   | .5-0-.5           | .02        |
| 2300-3 kPa   | 1.5-0-1.5         | .10        |
| + These ranges calibrated for vertical scale position. |                   |            |

